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Passalid Beetles (Coleoptera, Passalidae) Collected from the Malay Peninsula, with Descriptions of Two New Species of *Pelopides* and *Leptaulax*

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Abstract Eighteen species of Passalidae are recorded from the Malay Peninsula. In addition, two new species of the genera *Pelopides* and *Leptaulax* are described under the names of *P. pedroi* sp. nov. and *L. castilloae* sp. nov., respectively.

One of the authors (Araya) collected about 90 examples of Passalidae from the Malay Peninsula during the Kyoto University Expeditions to the Malay Peninsula in 1992–1993. After a careful examination of the collected specimens, we recognized 20 species including two undescribed ones in the collection. Thus, we are going to record 18 known species of Passalidae from the Malay Peninsula and, in addition, to describe two new species of *Pelopides* and *Leptaulax*.

In the following descriptions, we adopt the terminology of Gravely (1914) and Iwase (1996) for external morphology and Lindroth (1957) for male genitalia. We refer to Hincks and Dibb (1935, 1958) and some subsequent works for the distribution of each species.

Subfamily Aulacocyclinae

Comacupes cavicornis (KAUP)

Aulacocyclus cavicornis KAUP, 1868, Coleopt. Häfte, **3**, p. 6.

Specimens examined. 1♂, 1♀, Penang Hill, 24–XII–1992.
Distribution. Malay Peninsula, Sumatra, Java, Borneo.

Comacupes cylindraceus (PERTY)

Passalus cylindraceus PERTY, 1831, Obs. nonnullae Coleopt. Ind. orient, p. 36.

Specimens examined. 1♀, Gombak, 4–XII–1992; 2 exs., Cameron Highlands, 9–I–1993.
Distribution. Malay Peninsula, Sumatra, Java, Borneo.

Taeniocerus pygmaeus (KAUP)

Aulacocyclus pygmaeus KAUP, 1868, Coleopt. Häfte, **3**, p. 5.

Specimens examined. 2 exs., Penang Hill, 550 m in altitude, 24–XII–1992.
Distribution. Malay Peninsula, Sumatra, Borneo.

Subfamily Passalinae

Macrolinus cartereti BOUCHER

Macrolinus cartereti BOUCHER, 1996, Nouv. Revue Ent., (N. S.), **13**, p. 172.
Specimen examined. 1 ex., Genting Highlands, 4–I–1993.
Distribution. Malay Peninsula.

Ophrygonius ferreri BOUCHER

Ophrygonius ferreri BOUCHER, 1993, Nouv. Revue Ent., (N. S.), **10**, p. 166.

Specimen examined. 1 ex., Tanah Rata, Cameron Highlands, 6–I–1993.
Distribution. Malay Peninsula.

Ophrygonius inaequalis (BURMEISTER)

Passalus inaequalis BURMEISTER, 1847, Handb. Ent., **5**, p. 468.

Specimen examined. 1♀, Penang Hill, 550 m in altitude, 24–XII–1992.
Distribution. Malay Peninsula, Sumatra, Java, Borneo.

Ophrygonius minor (GRAVELY)

Aceraius minor GRAVELY, 1914, Mem. Ind. Mus., **3**, p. 234.

Specimens examined. 6 exs., Bukit Larut, 1,100 m in altitude, 2–I–1993; 1 ex., ditto, 3–I–1993.

Distribution. Malay Peninsula.

Ophrygonius tuberculus BOUCHER

Ophrygonius tuberculus BOUCHER, 1995, Annls. Soc. ent. Fr., (N. S.), **31**, p. 54.

Specimens examined. 1♂, 1♀, Fraser's Hill, 12–XII–1992; 1 ex., Genting Highlands, 1–XII–1992; 1 ex., ditto, 15–I–1993; 1♀, ditto, 23–I–1993.

Distribution. Malay Peninsula.

Aceraius alutaceosternus KUWERT

Aceraius alutaceosternus KUWERT, 1898, Novit. zool., **5**, p. 347.

Specimens examined. 1♂, 1♀, Bukit Larut, 1,200 m in altitude, 2–I–1993; 1♀, Genting Highlands, 950 m in altitude, 16–I–1993.

Distribution. Malay Peninsula, Sumatra, Borneo.

Aceraius ashidai KON, ARAYA et JOHKI

Aceraius ashidai KON, ARAYA et JOHKI, 1992, Elytra, Tokyo, **20**, p. 204.

Specimens examined. 1♀, Genting Highlands, 1,100 m in altitude, 5–XII–1992; 1♂, 1♀, ditto, 1,200 m in altitude, 8–XII–1992; 2 exs., ditto, 17–I–1993; 1 ex., ditto, 19–I–1993; 4♂♂, 2♀♀, Bukit Larut, 1,100 m in altitude, 2–I–1993; 1♀, ditto, 865 m in altitude, 2–I–1993; 2 exs., ditto, 1,200 m in altitude, 3–I–1993; 1♀, Genting Highlands, 1,100 m in altitude, 2–I–1993; 1 ex., Cameron Highlands, 8–I–1993.

Distribution. Malay Peninsula, Sumatra.

Aceraius grandis (BURMEISTER)

Passalus grandis BURMEISTER, 1847, Handb. Ent., **5**, p.463.

Specimens examined. 1♀, Fraser's Hill, 11–XII–1992; 1♂, Bukit Larut, XII–1992.

Distribution. Eastern Himalayas, Myanmar, Thailand, Cambodia, Vietnam, Taiwan, Malay Peninsula, Sumatra, Java, Borneo, Philippines.

Aceraius helferi KUWERT

Aceraius helferi KUWERT, 1891, Dtsch. ent. Z., **1891**, p. 163.

Specimens examined. 2♂♂, 1♀, Gombak, 4–XII–1992; 4 exs., ditto, 6–XII–1992; 1 ex., ditto, 7–XII–1992; 1 ex., Jardu Baiku, 380 m in altitude, 16–I–1993.

Distribution. Eastern Himalayas, Myanmar, Laos, Vietnam, Thailand, China, Malay Peninsula.

Aceraius laevicollis (ILLIGER)

Passalus laevicollis ILLIGER in WIEDEMANN, 1800, Arch. Zool., **1**, p. 103.

Specimens examined. 2 exs., Templar Park, 9–XII–1992.

Distribution. Malay Peninsula, Sumatra, Java, Borneo, Philippines.

Aceraius oculidens ZANG

Aceraius oculidens ZANG, 1905, Dtsch. ent. Z., **1905**, p. 190.

Specimens examined. 1♂, 1♀, Fraser's Hill, 11–XII–1992; 3♂♂, 1♀, Bukit Larut, XII–1992.

Distribution. Malay Peninsula, Sumatra, Borneo.

Pelopides pedroi KON, JOHKI et ARAYA, sp. nov.

(Figs. 1–4)

Description of holotype. Male. Body black, polished; body length from anterior margin of head to apices of elytra 41.0 mm.

Outer tubercles symmetrical, transversely truncated and weakly bifid at distal end; inner distal angle of outer tubercle not more prominent forwards than the outer one; anterior margin of outer tubercle weakly concave, with a distinct tubercle pointed upwards at the middle; upper surface of outer tubercle weakly hollowed in outer portion, almost smooth in the hollow; distance between inner angles of both outer tubercles much wider than width of outer tubercle; anterior area between outer tubercles weakly concave, smooth; inner tubercles large, pointed upwards and forwards; ridge between inner tubercles distinct though not so strong; frontal area weakly rugose, with a small swelling at the middle; central tubercle blunt, obtusely angled in lateral view; parietal ridge blunt; supraoccipital ridge distinct along whole length, connected with posterior portion of supraorbital ridge in distal portion; area behind outer tubercle and depressed area rugose; canthus rounded at anterior angle, rough on upper surface; eye small, slightly extending beyond distal end of canthus. Anterior lower tooth of left mandible triangular, as long as lowest terminal tooth though thinner than the latter; anterior lower tooth of right mandible almost obsolete and represented as a slight swelling;

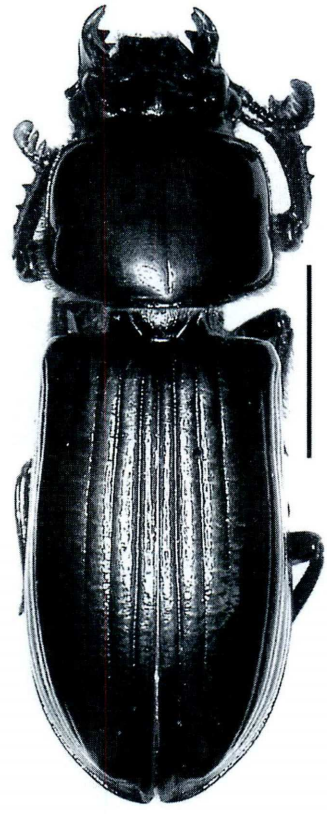

Fig. 1. Habitus of *Pelopides pedroi* sp. nov., holotype. Scale 10 mm.

lowest terminal tooth of right mandible triangular, as large as the left one; upper tooth of mandible distinct though low, obtuse-angled in lateral view; outer basal angle of mandible blunt. Labrum with setiferous punctures; anterior margin weakly concave, without distinct denticle at the middle; anterior angles rounded, the left one slightly more prominent forwards than the right one. Antenna with six short lamellae. Ligula pointed forwards at the middle of anterior margin, punctured and hairy in central portion, with median ridge in anterior portion, with a strong tubercle close to the basal inner side of labial palpus. Mentum with setiferous punctures in lateral portion, impunctate and hairless in central portion, with oblique scar; anterior margin almost straight in central portion; posterior margin straight. Hypostomal process impunctate, hairless, smooth; inner margin weakly convex; outer margin slightly concave in anterior portion.

Pronotum with slight median sulcus, weakly rough in marginal groove. Posterior plate of prosternum punctured and hairy in central portion. Mesosternum impunctate and hairless in central portion, punctured and hairy in scar; mesothoracic episternum hairy in posterior corner. Lateral and anterior intermediate areas of metasternum

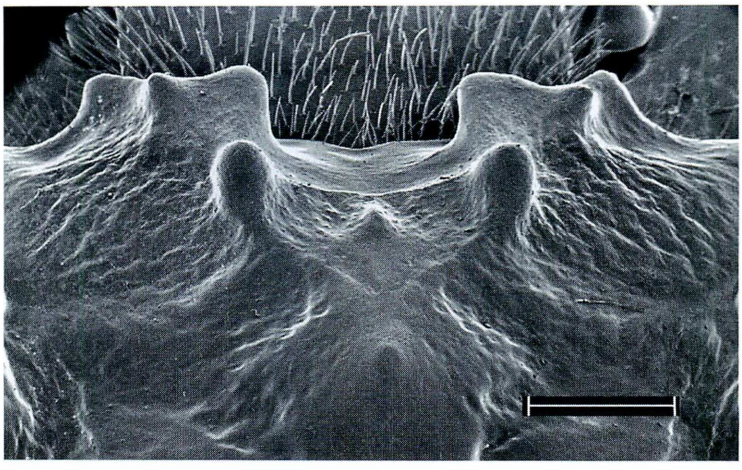

Fig. 2. Anterior part of head of *Pelopides pedroi* sp. nov., holotype. Scale 1 mm.

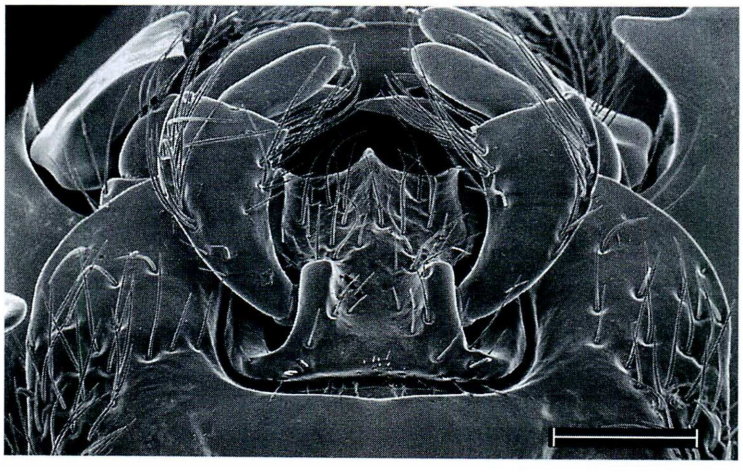

Fig. 3. Ligula and mentum of *Pelopides pedroi* sp. nov., holotype. Scale 1 mm.

densely punctured and hairy; posterior intermediate area impunctate and hairless, with weak small dents along posterior margin of central area; ridge separating between intermediate and lateral areas indistinct; central area impunctate and hairless.

Lateral grooves of elytron simply and shallowly punctured. Fifth tarsomere rounded at dorso-distal end in all legs.

Second visible abdominal sternite with a few hairs along transverse ridge, mat in anterior portion; third to sixth polished, impunctate and hairless.

Penis large, longer than the sum of parameres and basal piece in ventral view; with longitudinal membranous area along the middle line on ventral side; parameres

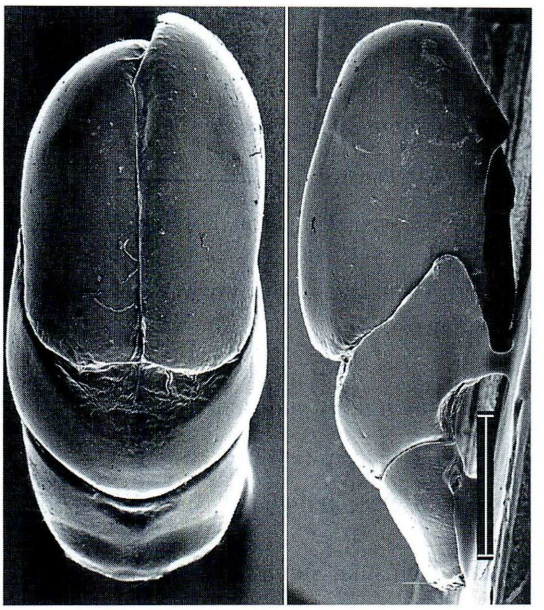

Fig. 4. Male genitalia of *Pelopides pedroi* sp. nov., holotype, ventral view (left), right lateral view (right). Scale 1 mm.

united on ventral side, with anterior margin concave in ventral view, lateral margins almost parallel in ventral view; basal piece transverse, as long as parameres in ventral view, with anterior margin concave in ventral view.

Type series. Holotype: ♂, Genting Highlands, Malay Peninsula, 15–I–1993, K. ARAYA leg. Paratype: 1 ♀, the same data as for the holotype.

The holotype is deposited in the collection of the School of Environmental and Natural Resource Sciences, Universiti Kebangsaan Malaysia.

Etymology. The present new species is dedicated to Dr. Pedro REYES-CASTILLO, who is one of the dominant figures in the studies on the Passalidae.

Variation. Body length of the female paratype is 40.0 mm. No sexual dimorphism is evident.

Distribution. Malay Peninsula.

Notes. The present new species resembles *Pelopides dorsalis* (KAUP) but can be distinguished from the latter by the following points: anterior margin of labrum without distinct denticle at the middle; inner angle of outer tubercle not strongly prominent forwards; anterior lower tooth obsolete; striae of elytron very finely punctured.

Leptaulax apicalis IWASE

Leptaulax apicalis IWASE, 1996, Jpn. J. syst. Ent., **2**, p. 33.

Specimen examined. 1♀, Genting Highlands, 1,440 m in altitude, 17–I–1993.
Distribution. Malay Peninsula.

Leptaulax cyclotaenius KUWERT

Leptaulax cyclotaenius KUWERT, 1891, Dtsch. ent. Z., **1891**, p. 188.

Specimens examined. 3 exs., Cameron Highlands, 8–I–1993; 7 exs., Genting Highlands, 1,550 m in altitude, 15–I–1993.
Distribution. Eastern Himalayas, Myanmar, Vietnam, Cambodia, Malay Peninsula, Sumatra, Borneo, Sulawesi.

Leptaulax malaccae KUWERT

Leptaulax malaccae KUWERT, 1891, Dtsch. ent. Z., **1891**, p. 188.

Specimens examined. 8 exs., Templar Park, 9–XII–1992; 1 ex., Ipoh, 17–XII–1992.
Distribution. Malay Peninsula, Sumatra, Borneo.

Leptaulax planus ILLIGER

Leptaulax planus ILLIGER in WIEDEMANN, 1800, Arch. Zool., **1**, p. 104.

Specimens examined. 2 exs., Templar Park, 9–XII–1992.
Distribution. Myanmar, Thailand, Malay Peninsula, Sumatra, Java, Borneo, Sulawesi.

Leptaulax castilloae KON, JOHKI et ARAYA, sp. nov.

(Figs. 5–8)

Description of the holotype. Male. Length from anterior margin of head to apices of elytra 21.5 mm. Body polished, black, flat, ratio of prothorax thickness to pronotum width 0.55.

Inner marginal tubercle triangular, larger and more prominent forwards than outer one; distance between inner marginal tubercles almost twice as that between inner and outer ones; outer marginal tubercle triangular, pointed forwards and a little outwards; ridge between inner marginal tubercles slightly swollen at the middle. Canthus with anterior angle rounded, with transverse ridge on upper surface. Eye moderately large, slightly projecting laterally beyond outer end of canthus. Frontal area wider than long, with a few punctures, without median keel; area behind outer marginal tubercle with some punctures; depressed area prior to parietal ridge with punctures, the punctures in outer and posterior portions hair-bearing; area behind parietal ridge with hair-bearing

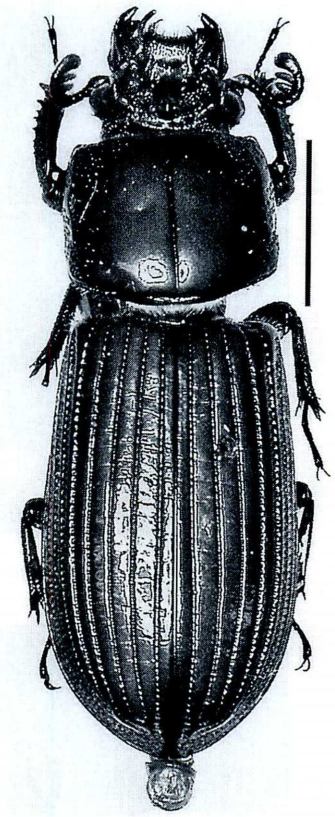

Fig. 5. Habitus of *Leptaulax castilloae* sp. nov., holotype. Scale 5 mm.

punctures; frontal ridge distinct along whole length, slightly swollen upwards in proximal portion, gently curved towards inner tubercle and weakly convergent in distal portion; parietal ridge almost transverse, fading and not reaching supraorbital ridge in distal portion. Outer margin of mandible with obtuse angle near base; upper margin swollen behind upper tooth, with a weak swelling prior to the base of upper tooth; upper inner surface of mandible densely punctured and hairy in proximal portion; upper tooth low, right-angled; anterior lower tooth triangular, smaller than lowest terminal tooth. Labrum almost symmetrical, with long setae in distal portion, densely punctured and hairy in proximal portion, anterior margin concave, lateral margins weakly divergent anteriad, anterior angle rounded. Ligula strongly pointed forwards at the middle of anterior margin. Mentum polished, with large setiferous punctures in lateral portion, impunctate and hairless in central portion, with scar like a semicircular arch opening forwards; anterior margin of mentum gently convex forwards in central portion. Hypostomal process hairless, hollowed in antero-outer portion, rough in the hollow, with lateral margins slightly concave in anterior portion. Antenna with three moderately long lamellae; upper surface of scape mat.

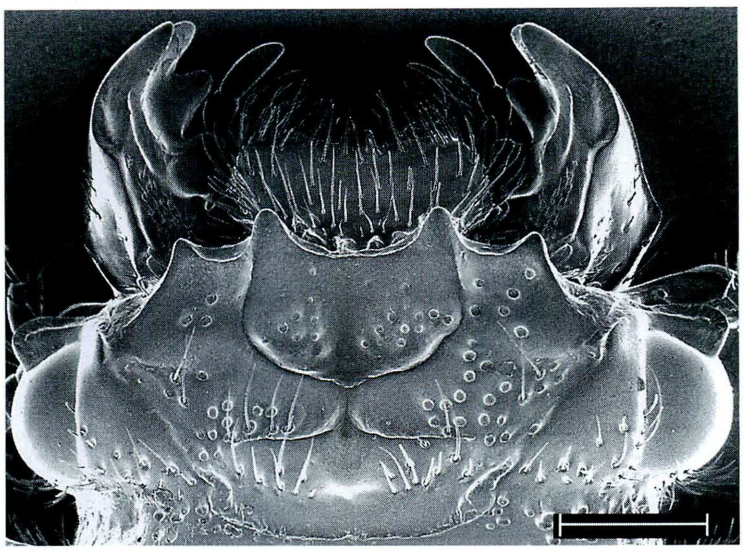

Fig. 6. Head of *Leptaulax castilloae* sp. nov., holotype. Scale 1 mm.

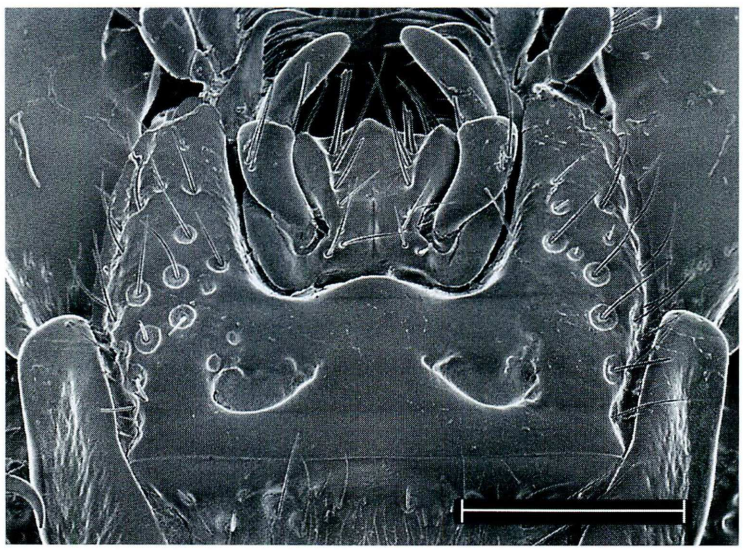

Fig. 7. Ligula and mentum of *Leptaulax castilloae* sp. nov., holotype. Scale 1 mm.

Pronotum with distinct median sulcus, hairless, punctured in lateral portion, with anterior angle weakly pointed forwards. Prosternum mat, impunctate and hairless in posterior plate, hairless and polished in middle portion between procoxae. Mesothoracic episternum mat; mesosternum smooth and impunctate in central portion, mat in

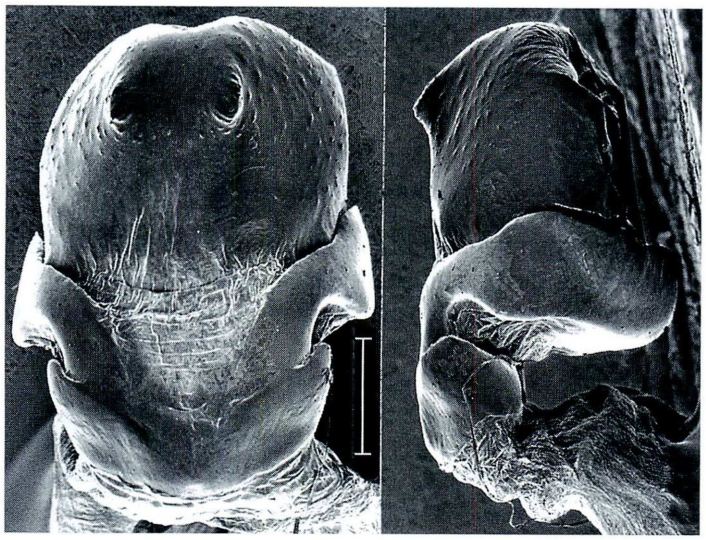

Fig. 8. Male genitalia of *Leptaulax castilloae* sp. nov., holotype, ventral view (left), right lateral view (right). Scale 0.5 mm.

lateral portion, with shallow scar. Central area of metasternum polished, impunctate; anterior intermediate area shallowly and finely punctured, hairless and rough; posterior intermediate area punctured in inner portion, impunctate in outer portion; lateral area rough, hairless, narrow, slightly widened posteriad. Elytra not united, weakly widened posteriad, hairy at humerus, mat and with oblong punctures in lateral striae. Upper surfaces of middle and hind tibiae glossy, densely punctured and hairy. Abdominal sternites hairless, rough in lateral portion; the last sternite with distinct posterior margin.

Penis large, longer than the sum of parameres and basal piece, with small granules on ventral surface, with a pair of strong tubercles on ventro-distal portion; parameres broadened and united on dorsal side, separated from each other by membranous area and with proximal margin excavated in ventral view; basal piece small, narrower than parameres in ventral view, with anterior margin V-shaped in ventral view.

Type series. Holotype: ♂, Bukit Larut, 1,200 m, 2–I–1993. Paratype: 1♀, the same data as for the holotype.

The holotype is deposited in the collection of the School of Environmental and Natural Resource Sciences, Universiti Kebangsaan Malaysia.

Etymology. The present new species is dedicated to Dr. Maria Luisa CASTILLO, who has been giving us warm companionship.

Variation. Body length of the female paratype is 21.0 mm. No sexual dimorphism is evident.

Distribution. Malay Peninsula.

Notes. The present new species can be distinguished from any other known

species of *Leptaulax* by the combination of the following characters: parietal ridge fading away before reaching supraorbital ridge; lateral striae of elytron mat and with oblong punctures; humerus of elytron hairy; penis of male genitalia with a pair of strong tubercles on ventro-distal portion.

Acknowledgments

We express our cordial thanks to Prof. M. MATSUI and Prof. H. S. YONG for giving us the opportunity of the present study. Thanks are also due to Drs. T. HIKIDA and H. OTA for their warm companionship and assistance during the field survey.

要　　約

近　雅博・常喜　豊・荒谷邦雄：マレー半島から採集されたクロツヤムシ：*Pelopides*属と*Leptaulax*属の2新種．—— マレー半島から採集された18種のクロツヤムシを記録した．それに加えて，*Pelopides*属と*Leptaulax*属の新種を，それぞれ*Pelopides pedroi* sp. nov.と*Leptaulax castilloae* sp. nov.と名付けて記載した．

References

GRAVELY, F. H., 1914. An account of the Oriental Passalidae based primarily on the collection in the Indian Museum. *Mem. Ind. Mus.*, **3**: 177–353.

HINCKS, W. D., & J. R. DIBB, 1935. Passalidae. *In*: JUNK, W., & S. SCHENKLING (eds.), *Coleopterorum Catalogus*, pars 142: 1–118. W. Junk, Berlin.

——— & ——— 1958. Passalidae. *In*: HINCKS, W. D. (ed.), *Coleopterorum Catalogus Supplementa*, pars 142: 1–32. W. Junk, Berlin.

IWASE, K., 1996. Some new passalid beetles of the genus *Leptaulax* (Coleoptera, Passalidae) from the Greater Sunda, with a key to the species of the genus *Leptaulax* from the Greater Sunda. *Jpn. J. syst. Ent.*, **2**: 219–234.

LINDROTH, C., 1957. The principal terms used for male and female genitalia in Coleoptera. *Opusc. ent., Lund*, **22**: 241–256.